

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listing of claims in the present Application.

We claim:

1. (currently amended) A medical container having a negative image bar code~~encoding~~
~~symbology~~ comprising:
 a medical container~~a substrate~~;
 a plurality of light-reflecting segments ~~separated by spaces and~~ disposed on the
container~~the substrate~~,
 wherein the container defines spaces that separate the light-reflecting
segments,[[;]]
 wherein the spaces ~~defined~~defining light-absorbing segments,[[;]]
 wherein the light-reflecting segments and the light-absorbing segments
define a negative image bar code representing fixed information and variable information,[[;
and]]
 wherein the negative image bar code~~encoding symbology~~ is detectable using
a reader, and[[.]]
 wherein the variable information comprises at least one selected from the
group consisting of: lot number, batch number, expiration date, serial number, production time,
price, and concentration.
2. (currently amended) The medical container~~encoding symbology~~ of claim 1 wherein the
light-reflecting segments are indicia that can be detected by a reader.
3. (currently amended) The medical container~~encoding symbology~~ of claim 2 wherein the
indicia is visible to the naked human eye.
4. (currently amended) The medical container~~encoding symbology~~ of claim 3 wherein the
indicia has a color selected from the group consisting of white, red, yellow, orange, gold, and
silver.

5. (currently amended) The medical container~~encoding symbology~~ of claim 2[[3]] wherein the indicia is not visible to the naked human eye.

6. (currently amended) The medical container~~encoding symbology~~ of claim 1 wherein the fixed information remains unchanged for a first period of time while the variable information changes during the first period.

7. (currently amended) The medical container~~encoding symbology~~ of claim 1 wherein the fixed information is selected from the group consisting of product name, product manufacturer, Universal Product Code, Universal Product Number, National Drug Code, National Health Related Industry Code, and label copy data.

8. (canceled)

9. (canceled)

10. (currently amended) The medical container~~encoding symbology~~ of claim 1 wherein the medical container~~substrate~~ comprises a thermoplastic polymer or a thermoset polymer.

11. (currently amended) The medical container~~encoding symbology~~ of claim 10 wherein the thermoplastic polymer or the thermoset polymer is selected from the group consisting of polyvinylchloride, polyvinylidichloride, polyolefins, polyamides, polycarbonates, polyesters, thermoplastic elastomers, elastomers, polyimides, polyurethanes, ethylene vinyl alcohol copolymers, ethylene vinyl acetate copolymers, ethylene copolymers, propylene copolymers, acrylic acid copolymers, ethylene substituted acrylic acid copolymers, α -olefin substituted acrylic acid copolymers, hydrocarbon block polymers, ethylene propylene diene polymers, nylon, mono-layer film structures and multi-layer film structures.

12. (currently amended) The medical container~~encoding symbology~~ of claim 11 wherein the polyolefin is produced from an α -olefin having from about 2 to about 20 carbons.

13. (currently amended) The medical container~~coding symbology~~ of claim 12 wherein the α -olefin is ethylene or propylene.

14. (currently amended) A container having a negative image bar code, the container ~~coding symbology~~ comprising:

a flexible film~~substrate~~;

a plurality of light-reflecting segments ~~separated by spaces and~~ disposed on the film~~substrate~~,

wherein the film defines spaces that separate the light-reflecting segments,

wherein the spaces ~~defined~~ defining light-absorbing segments,[[;]]

wherein the light-reflecting segments and the light-absorbing segments define a negative image bar code representing fixed information and variable information,[[;]]

wherein the variable information comprises at least one selected from the group consisting of: lot number, batch number, expiration date, serial number, production time, price, and concentration, and

wherein the negative image bar code~~coding symbology~~ is detectable using a reader[[; and]]

~~wherein the substrate comprises a pouch-type flexible container.~~

15. (currently amended) A medical container having a negative image bar code~~coding symbology~~ comprising:

a medical container~~substrate~~;

a first plurality of light-reflecting segments ~~separated by spaces and~~ disposed on the medical container, wherein the medical container defines first spaces that separate the first plurality of light-reflecting segments, wherein the first spaces ~~defined~~ defining a first set of light-absorbing segments, and wherein the first plurality and the first set define a first negative image bar code representing fixed information;

a second plurality of light-reflecting segments ~~separated by spaces and~~ disposed on the medical container, wherein the medical container defines second spaces that separate the second plurality of light-reflecting segments, wherein the second spaces ~~defined~~ defining a second

set of light-absorbing segments, wherein the second plurality and the second set define a second negative image bar code representing variable information, wherein the variable information comprises at least one selected from the group consisting of: lot number, batch number, expiration date, serial number, production time, price, and concentration; and
wherein the first bar code and the second bar code are each encoding
~~symbology~~ is detectable using a reader.

16. (currently amended) A medical container having a negative image bar code encoding
~~symbology~~ comprising:

a medical containersubstrate ~~defining a portion of the container;~~

a plurality of light-reflecting segments ~~separated by spaces and~~ disposed on the medical containersubstrate, wherein the medical container defines spaces that separate the plurality of light-reflecting segments, and wherein the spaces defined~~defining~~ light-absorbing segments;

wherein the light-reflecting segments and the light-absorbing segments define a negative image bar code representing ~~fixed information and~~ variable information;

wherein the negative image bar code is detectable using a reader; and

wherein the variable information comprises at least one selected from the group consisting of: lot number, batch number, expiration date, serial number, production time, price, and concentration

~~wherein the container is a medical container.~~

17. (currently amended) A container comprising:

a flexible filmsubstrate;

~~a first plurality of light-reflecting segments separated by spaces and disposed on the substrate, the spaces defining a first set of light-absorbing segments, and wherein the first plurality and the first set define a first bar code representing fixed information;~~

a second plurality of light-reflecting segments ~~separated by spaces and~~ disposed on the flexible filmsubstrate, wherein the flexible film defines spaces that separate the plurality of light-reflecting segments, wherein the spaces defined~~defining~~ a second set of light-absorbing

segments, ~~[[and]]~~ wherein the ~~second~~ plurality and the ~~second~~ set define a ~~second~~ negative image bar code representing variable information~~[[;]]~~, wherein the ~~first bar code and second bar code~~ ~~[[are]]~~ is detectable using a reader~~[[; and]]~~, and wherein the variable information comprises at least one selected from the group consisting of: lot number, batch number, expiration date, serial number, production time, price, and concentration

~~wherein the container is a medical container.~~

18. (currently amended) A container system comprising:

a medical ~~primary~~ container~~having a substrate~~;

a plurality of light-reflecting segments ~~separated by spaces and~~ disposed on the medical containersubstrate, wherein the medical container defines spaces that separate the plurality of light-reflecting segments, wherein the spaces define light-absorbing segments, wherein the light-reflecting segments and the light-absorbing segments define a negative image bar code representing fixed information and variable information, ~~and wherein the bar code is detectable using a reader[[;]] and~~

a material positioned over a portion of the bar codesubstrate, wherein the portion has an A or B scan grade when decoded through the material and in accordance with ANSI X3.182.

19. (currently amended) A container system comprising:

a medical~~primary~~ container ~~having~~ substrate;

a first plurality of light-reflecting segments ~~separated by spaces and~~ disposed on the medical containersubstrate, wherein the medical container defines first spaces that separate the first plurality of light-reflecting segments, wherein the first spaces ~~defined~~defining a first set of light-absorbing segments, and wherein the first plurality and the first set define a first negative image bar code representing fixed information;

a second plurality of light-reflecting segments ~~separated by spaces and~~ disposed on the medical containersubstrate, wherein the medical container defines second spaces that separate the second plurality of light-reflecting segments, wherein the second spaces

~~defined~~defining a second set of light-absorbing segments, and wherein the second plurality and the second set define a second negative image bar code representing variable information;

~~wherein the first bar code and the second bar code are detectable using a reader; and~~

a material positioned over a portion ~~each bar code~~of the substrate, wherein each portion has an A or B scan grade when decoded through the material and in accordance with ANSI X3.182.

20. (currently amended) A container system comprising:

a ~~medical~~primary container having substrate;

a first plurality of light-reflecting segments ~~separated by spaces and~~ disposed on the ~~medical container~~substrate, wherein the medical container defines spaces that separate the plurality of light-reflecting segments, wherein the spaces ~~defined~~defining a first set of light-absorbing segments, [[and]] wherein the first plurality and the first set define a first negative image bar code representing ~~fixed information or~~ variable information;

a material positioned over a portion of the bar code, andsubstrate;

~~a second plurality of light-reflecting segments separated by spaces and disposed on the material, the spaces defining a second set of light-absorbing segments, and wherein the second plurality and the second set define a second bar code representing fixed information or variable information;~~

~~wherein the first bar code and the second bar code are detectable using a reader; and~~

wherein the portion of the bar code has an A or B scan grade when decoded through the material and in accordance with ANSI X3.182

~~wherein the combination of the first bar code and the second bar code represent fixed information and variable information.~~

21. (currently amended) A container system comprising:

a ~~flexible container~~primary container having a substrate;

~~a material positioned over a portion of the substrate;~~

~~a plurality of light-reflecting segments separated by spaces and disposed on the flexible container material, wherein the flexible container defines spaces that separate the plurality of light-reflecting segments, wherein the spaces defined~~defining light-absorbing segments, [[and]] wherein the light-reflecting segments and the light-absorbing segments define a negative image bar code representing fixed information and variable information, wherein the variable information comprises at least one selected from the group consisting of: lot number, batch number, expiration date, serial number, production time, price, and concentration,[[;]] and wherein the bar code is detectable using a reader[[.]];

~~a material positioned over a portion of the bar code, wherein the portion of the bar code has an A or B scan grade when decoded through the material and in accordance with ANSI X3.182.~~

22. (currently amended) A container ~~system~~ comprising:

~~a film that defines the container~~primary container having substrate;

~~a material positioned over a portion of the substrate;~~

~~a first plurality of light reflecting segments separated by spaces and disposed on the material, the spaces defining a first set of light-absorbing segments, and wherein the first plurality and the first set define a first bar code representing fixed information;~~

~~a second plurality of light-reflecting segments separated by spaces and disposed on the film~~material, wherein the film defines spaces that separate the light-reflecting segments, wherein the spaces defineddefining a second set of light-absorbing segments, [[and]] wherein the second plurality and the second set define a second negative image bar code representing variable information, wherein the bar code can be detected by a reader, and wherein the variable information comprises at least one selected from the group consisting of: lot number, batch number, expiration date, serial number, production time, price, and concentration. [[;]]

~~wherein the first bar code and the second bar code are each detectable using a reader.~~

23. (currently amended) A method of transferring a negative image bar code onto a flexible web-of-material comprising the steps of:

providing a flexible web-of-material;

providing a printer capable of transferring a plurality of light-reflecting segments negative image bar code onto the web in response to a signal representative of the plurality of light-reflecting segments, negative image bar code, the negative image bar code representing fixed information and variable information; and

transferring the signal to the printer; and

transferring the plurality of light-reflecting segments negative image bar code onto the web-of-material, wherein the web defines spaces that separate the plurality of light-reflecting segments, wherein the spaces define a plurality light-absorbing segments, wherein the light-reflecting segments and the light-absorbing segments define a negative image bar code that can be detected by a reader, wherein the negative image bar code represents fixed information and variable information, and wherein the variable information comprises at least one selected from the group consisting of: lot number, batch number, expiration date, serial number, production time, price, and concentration.

24. (currently amended) The method of claim 23 wherein the printer is a thermal transfer printer, a hot-stamp printer, a laser printer, an ink-jet printer, or a flexographic printer.

25. (currently amended) A container system comprising:

a flexibleprimary container having a substrate;

a plurality of light-reflecting segments disposed on the flexible container, wherein the flexible container defines spaces that separate the plurality of light-reflecting segments, wherein the spaces define light-absorbing segments, wherein the light-reflecting segments and the light-absorbing segments define a negative image bar code representing variable information, wherein the variable information comprises at least one selected from the group consisting of: lot number, batch number, expiration date, serial number, production time, price, and concentration; and[[:]]

a material positioned over a portion of the negative image bar code, substrate;
wherein the portion of the bar code has an A or B scan grade when decoded through the material
and in accordance with ANSI X3.182 ~~container system has a negative image bar code~~
~~representing fixed information and variable information, and wherein the negative image bar~~
~~code is detectable using a reader.~~

26-32. (canceled)

33. (new) The container of claim 14 wherein the container is a medical container.

34. (new) The container of claim 33 wherein the light-reflecting segments are indicia having a color selected from the group consisting of white, red, yellow, orange, gold, and silver.

35. (new) The medical container of claim 34 wherein the negative image bar code comprises a symbology selected from the group consisting of: Code 16K, Code 39, Code 49, Codabar, Code 128, UPC-E, UPC-A, EAN-8, EAN-13, Reduced Space Symbology, composite symbol, PDF-417, and Interleaved 2-of-5.

36. (new) The medical container of claim 34 wherein the negative image bar code is a two-dimensional symbology.

37. (new) The medical container of claim 15 wherein the medical container is flexible.

38. (new) The medical container of claim 15 wherein the first or second negative image bar code comprises a symbology selected from the group consisting of: Code 16K, Code 39, Code 49, Codabar, Code 128, UPC-E, UPC-A, EAN-8, EAN-13, Reduced Space Symbology, composite symbol, PDF-417, and Interleaved 2-of-5.

39. (new) The medical container of claim 16 wherein the medical container is flexible.

40. (new) The medical container of claim 16 wherein the light-reflecting segments are indicia having a color selected from the group consisting of white, red, yellow, orange, gold, and silver.

41. (new) The medical container of claim 40 wherein the negative image bar code comprises a symbology selected from the group consisting of: Code 16K, Code 39, Code 49, Codabar, Code 128, UPC-E, UPC-A, EAN-8, EAN-13, Reduced Space Symbology, composite symbol, PDF-417, and Interleaved 2-of-5.

42. (new) The medical container of claim 40 wherein the negative image bar code is a two-dimensional symbology.

43. (new) The container of claim 17 wherein the container is a medical container.

44. (new) The container of claim 43 wherein the negative image bar code has a length less than 72 millimeters.

45. (new) The container of claim 43 wherein the negative image bar code has a length less than or equal to 52 millimeters.

46. (new) The container of claim 43 wherein the negative image bar code has a length less than or equal to 22 millimeters.

47. (new) The container system of claim 18 wherein the negative image bar code has a length less than 72 millimeters.

48. (new) The container system of claim 18 wherein the negative image bar code has a length less than or equal to 52 millimeters.

49. (new) The container system of claim 19 wherein the negative image bar code has a length less than 72 millimeters.

50. (new) The container system of claim 19 wherein the negative image bar code has a length less than or equal to 52 millimeters.

51. (new) The container system of claim 19 wherein the second plurality of light-reflecting segments are indicia having a color selected from the group consisting of white, red, yellow, orange, gold, and silver.

52. (new) The container system of claim 20 wherein the medical container is flexible.

53. (new) The container system of claim 52 wherein each bar code has a length less than 72 millimeters.

54. (new) The container system of claim 52 wherein the material is an overpouch comprising polyethylene, and wherein the overpouch has a thickness of at least 2 mils.

55. (new) The container system of claim 54 wherein the thickness of the overpouch is at least 4 mils.

56. (new) The container system of claim 54 wherein the thickness of the overpouch is at least 8 mils.

57. (new) The container system of claim 52 wherein each bar code has a length less than 52 millimeters.

58. (new) The container system of claim 21 wherein the bar code has a length less than 72 millimeters.

59. (new) The container of claim 22 further comprising a second plurality of light-reflecting segments disposed on the film, wherein the film defines spaces that separate the second plurality of light-reflecting segments, wherein the spaces define a second set of light-absorbing segments, wherein the second plurality and the second set define a second negative image bar code, wherein the second negative image bar code can be detected by a reader, and wherein the second negative image bar code represents fixed information.

60. (new) The container of claim 59 wherein each negative image bar code is characterized in having an A or B scan grade when decoded in accordance with ANSI X3.182 through an overpouch comprising polyethylene, wherein the overpouch has a thickness of at least 2 mils.

61. (new) The container of claim 60 wherein each negative image bar code has a length less than 72 millimeters.

62. (new) The container of claim 60 wherein each negative image bar code has a length less than or equal to 52 millimeters.

63. (new) A medical container having a bar code comprising:
a negative bar code disposed on the medical container,
wherein the medical container defines at least two spaces in the bar code, the spaces absorbing light,
wherein the negative image bar code is detectable with a bar code reader,
wherein the negative image bar code comprises variable information, and
wherein the variable information comprises at least one selected from the group consisting of: lot number, batch number, expiration date, serial number, production time, price, and concentration.

64. (new) The medical container of claim 63 wherein the medical container is flexible.
65. (new) The medical container of claim 64 wherein the bar code further comprises fixed information.
66. (new) The medical container of claim 63 wherein the spaces have a maximum reflectance of about twenty-five percent.
67. (new) The medical container of claim 52 wherein the negative image bar code comprises a symbology selected from the group consisting of: Code 16K, Code 39, Code 49, Codabar, Code 128, UPC-E, UPC-A, EAN-8, EAN-13, Reduced Space Symbology, composite symbol, PDF-417, and Interleaved 2-of-5.
68. (new) The medical container of claim 64 wherein the negative image bar code is a two-dimensional symbology.
69. (new) The medical container of claim 64 wherein the negative image bar code has a length less than 72 millimeters and is characterized as having an A or B scan grade when decoded in accordance with ANSI X3.182 through an overpouch having a thickness of at least 2 mils.
70. (new) The medical container of claim 64 wherein the negative image bar code has a length less or equal to 52 millimeters and is characterized as having an A or B scan grade when decoded in accordance with ANSI X3.182 through an overpouch having a thickness of at least 2 mils.
71. (new) The medical container of claim 6 wherein the first period of time is one day.